

## ABSTRACT OF THE DISCLOSURE

The invention includes a switchable circuit device. The device comprises a first conductive layer and a porous silicon matrix over the first conductive layer. A material is dispersed within pores of the porous silicon matrix, and the material has two stable states. A second conductive layer is formed over the porous silicon matrix. A current flow between the first and second conductive layers is influenced by which of the stable states the material is in.